

Name: _____ Period: _____

Close Reading Homework Packet- Due Date: _____

Complete the following check list as you read the passage and then answer the questions.
Make sure to show your evidence to back up your answers.

- ☐ First reading- Read the passage all the way through.
- ☐ Read the passage a second time.
- ☐ Draw a line between each paragraph (chunk the passage).
- ☐ Circle any important vocabulary or other terms you don't know- if you are unsure of what they mean, look them up!
- ☐ Highlight the main idea of each paragraph.
- ☐ Underline anything you think is important, interesting or surprising. Why did you underline it? Jot down a sentence or two to explain your reasons in the margin.
- ☐ Out to the side of each paragraph, write a 3-5 word summary of the paragraph.
- ☐ Once you have done your close reading strategies, answer the questions.
- ☐ Out to the side of each question, write where you found the text evidence to support your answer.

The Hammerman

1 Do you know the story of the earliest people who had your family's last name? I am James Nasmyth (nā'smith), and my story is fiery and fierce.

2 My surname, or last name, dates back to Scotland in the 1400s. My ancestor heard the heavy footsteps and clanking weapons of angry neighbors. He fled into a village blacksmith's shed. The blacksmith quickly dressed him in a hammerman's long, leather apron and gave him a sledgehammer. The rowdy Scots stormed into the smith's shed. They saw this new hammerman break the metal he was shaping. They shouted, "Ye're nae smyth!" or, "You are not a smith!" The blacksmith and the hammerman used their tools to drive away the men.

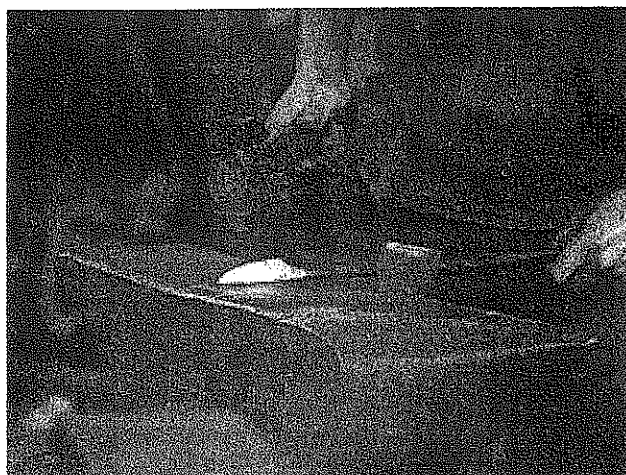
On Being the Twelfth Child

3 As the next in the line of Nasmyths, I was born the morning of August 19, 1808, in Edinburgh, Scotland. My parents, four brothers, and seven sisters welcomed me into the world. I soon learned about the special gifts that my family would share with me. My grandparents gave my parents a respect for excellent workmanship and appreciation for the arts. They passed these down to me.

4 Alexander Nasmyth, my father, was both a mechanical engineer and a landscape artist. He was a talented sketch artist and painter. My creative father once painted himself. He had accidentally burned his good socks while drying them by the fire. So he used watercolors to paint black and white socks on his feet and ankles!

The Beginnings of My Fearless Spirit

5 My father also taught me mechanical skills. I spent hours in his workroom



discovering how his tools worked. After a lot of practice, I could sketch an object so precisely that a person could use my drawing to build a model. I also remember a bad fall I had when I was six years old. I was sliding down the stair railing when I lost my grip. The steps were made of stone, but fortunately I fell on a carpet and was not injured badly. But I'll get to that point later.

6 In 1823, at age 15, I went on a trip with my father. I observed the process of smelting (melting to separate metals). I studied the tilt hammer that the smiths used. After returning to Edinburgh, I built working models of steam engines and tools. My drawings and work experiences prepared me for my profession as a mechanical engineer. In 1836, I started my own business and built machine tools at the Bridgewater Foundry in Patricroft, England.

My Ideas About Force and Pressure

7 My education and industry background helped me invent machines to solve mechanical engineering problems. Master toolmaker Henry Maundslay and I developed a marine steam engine to power steamships. To allow workers in the metal factory to safely remove molten iron from the furnace, I invented a safety ladle. When I was 31 years old, I decided that England

needed more powerful mechanical tools. I sketched a design in my journal and created the steam hammer. This invention used steam power to move a machine part up and down with great force. The steam hammer was very important in making ship anchors. It also strengthened pile-drivers. These pounded large poles into the ground for constructing buildings and docks.

8 I retired in 1856 and moved with my wife Anne to Hammerfield, England. I happily explored astronomy. I discovered new information about lunar craters and mountains. To see space objects in more detail, I designed and built a large reflecting telescope. From 1860 until 1864, I studied the sun's surface and made drawings. This research of sunspots and Willow-leaf patterns on the sun earned me international fame.

Using Machines to Build Machines

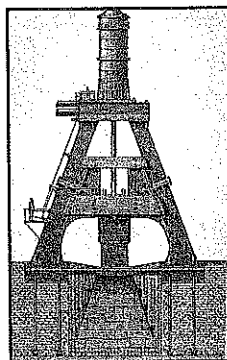
9 I tried my hand at mechanics and the arts, among other things. The key was to be fearless. My inventions improved the machine tools of the Industrial Revolution. As I think back to my safe landing during that childhood fall, I gratefully believe that "But for that there might have been no steam hammer." My legacy is my family's flair for metal work. This proves that the historical claim that my ancestor was not a smith was "nae" (not) true.



James Nasmyth (1808–1890)

THE BRIDGEWATER FOUNDRY STEAM HAMMER

IF IT'S BRIDGEWATER, IT'S QUALITY.

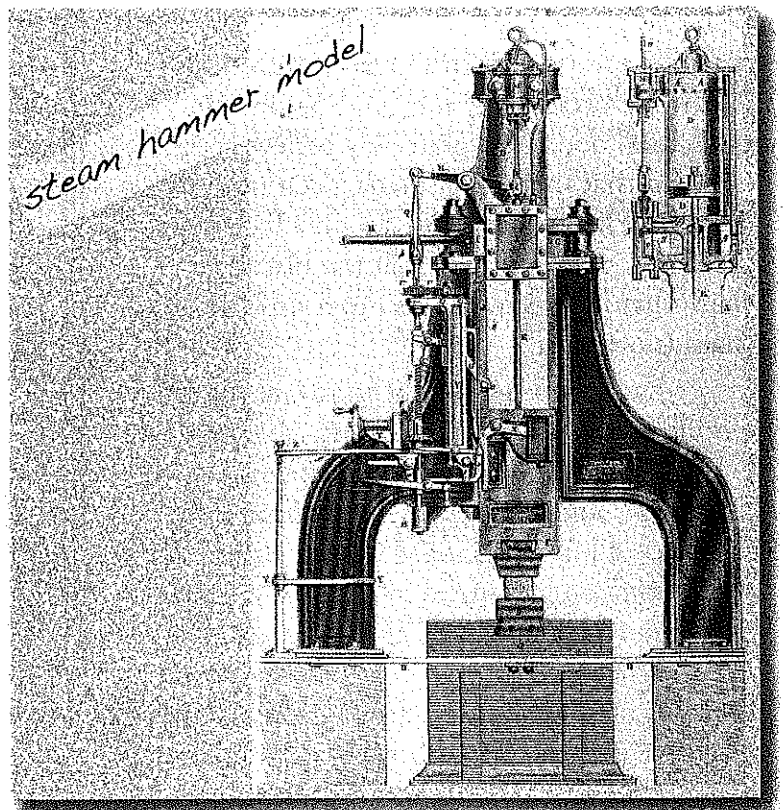


- A new way to think about force and pressure
- Adopted by metalworking shops country-wide
- The NEW way to shape metal

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A Steam Solution

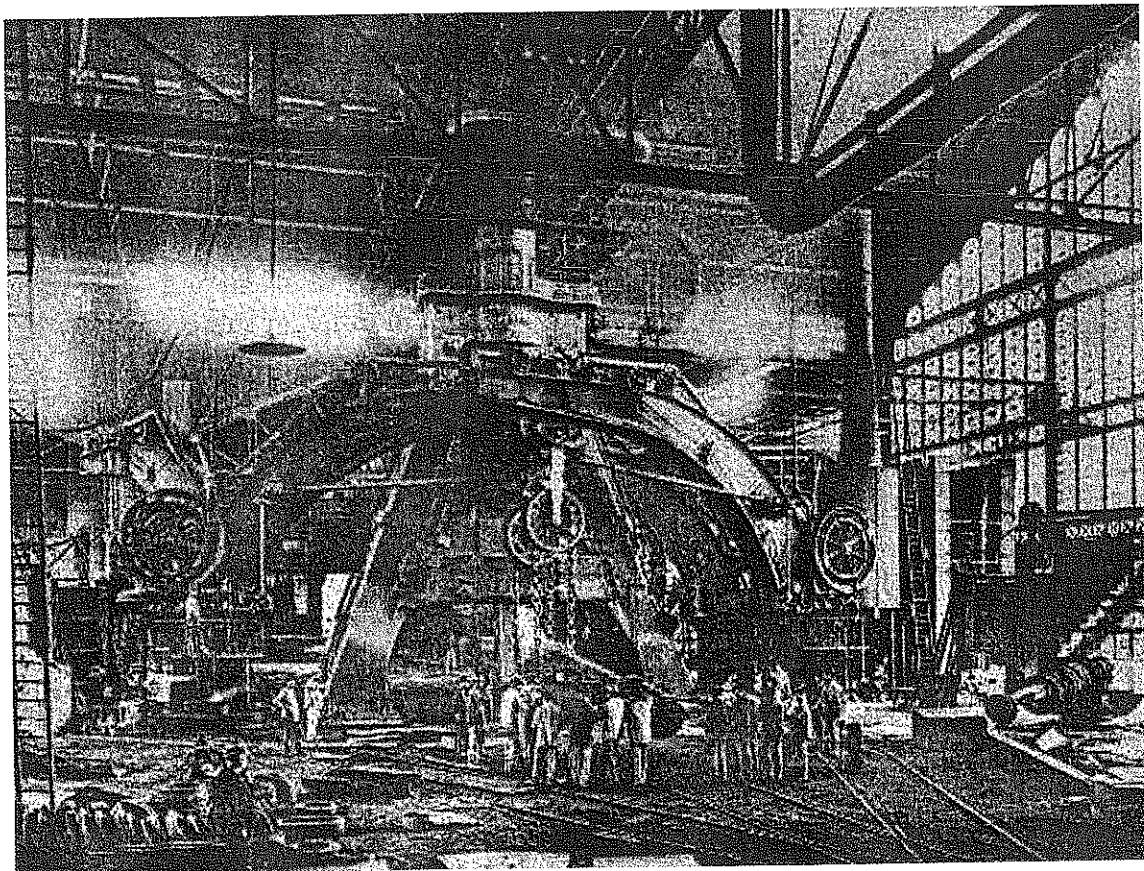
- 1 I come from a family that knows mechanics and metals. Therefore, when I invented the steam hammer, my family was proud but not surprised. My family's name, Nasmyth, had long been associated with metalwork. I was simply carrying on the tradition.
- 2 Let me relate the story behind this invention. It began the day in 1838 when I received a letter from Francis Humphries, one of the Great Western Steam Company's engineers, asking for my counsel.
- 3 "I have a problem," he wrote desperately. "I am working on the engine of the ship, the *SS Great Britain*, but I cannot find a forge hammer in England that is big enough." Needless to say, the man was panicked. The job had to be done, but the tools for the job did not exist! I decided to see if I could help.
- 4 First, I examined the tilt hammer that was currently being used. I could see immediately why this hammer would not work. The tilt hammer delivered the same force each time it struck the metal. It was simply an enlarged version of a regular smith's hammer. I knew we, as smiths, could not adhere strictly to the tools that had worked in the past. Clearly those were no longer effective for our purposes. I decided steam was the answer—a steam hammer. Using my "Scheme Book"—a book in which I kept my drawings for new ideas and inventions—I sketched a rough outline of what the steam hammer would entail. In less than half an hour after receiving Mr. Humphries' letter, I thought I had it perfected.
- 5 Soon I had built a model. It consisted basically of three parts: (1) the anvil, (2) a block of iron (the hammer), and (3) an inverted steam cylinder. Mr. Humphries was delighted with my design, but alas! He never got to use the steam hammer for his ship's engine, as the engineer-in-chief decided to change its basic design soon after.
- 6 Nevertheless, I knew I had a good product. I had confidence that I had invented something useful. I patented, or obtained exclusive rights to, my invention in 1842—I did not want anyone else to take credit for my idea! We began producing steam hammers at my factory in Patricroft, England.



Using the new hammer, we greatly reduced production costs for metalworking products. The end products were also of better quality than ever before. Until this point in time, the forging of large items such as ships' anchors had to be done a little at a time, with small pieces of the work being done individually and finally welded together.

7 Now, I'll tell you the secret that made my steam hammer so miraculous. It could be controlled so the force of each blow was different. One of my favorite ways to demonstrate this to people was to show how my hammer could break an egg in a wine glass (without breaking the glass), followed by a powerful blow that smashed anything in its path. People were amazed, and I was extremely proud of my invention each time I performed this demonstration.

8 Workshops all over the country soon realized the advantage my steam hammer would give them in their shops. Before long, Nasmyth hammers were being used in most workshops in the country. In less than 20 years, my company had manufactured and sold 490 of my new steam hammers across several continents. Our profits skyrocketed. I was satisfied—for the moment. My invention was, in so many words, quite a "hit"!



Steam hammer in use

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Use “The Hammerman” to answer questions 1–5.

Standard 10 (Facts For/Against an Issue) H

1. Which sentence from the passage directly supports James Nasmyth’s desire to be an inventor?
 - A *I observed the process of smelting (melting to separate metals).*
 - B *My ancestor heard the heavy footsteps and clanking weapons of angry neighbors.*
 - C *When I was 31 years old, I decided that England needed more powerful mechanical tools.*
 - D *My grandparents gave my parents a respect for excellent workmanship and appreciation for the arts.*

Standard 10 (Main Ideas/Supporting Details) L

2. What did Nasmyth do once he had an idea for an invention?
 - A Tested it in a factory
 - B Showed it to his father
 - C Studied related machines
 - D Sketched it in his journal

Standard 10 (Text Organization) H

3. The information in the passage is mainly organized by—
 - A giving other people’s opinions of James Nasmyth
 - B telling about the events of the Industrial Revolution
 - C describing James Nasmyth’s rise as a designer and inventor
 - D providing details about steam-powered tools and their origins

6.RC.E (Summarize/Paraphrase/Synthesize) M

4. Nasmyth says, “the key was to be fearless,” because he—
 - A did not care how his inventions turned out
 - B refused to design his inventions beforehand
 - C did not consider safety when inventing something new
 - D liked to invent and study things in different subject areas

Standard 13 (Media Techniques) H

5. Which words from the advertisement on page 39 are meant to appeal to a reader's desire to be like other people?

A *If it's Bridgewater, it's quality.*
 B *The NEW way to shape metal*
 C *A new way to think about force and pressure*
 D *Adopted by metalworking shops country-wide*

Use "A Steam Solution" to answer questions 6–9.

Standard 10 (Main Ideas/Supporting Details) L

6. Francis Humphries contacted Nasmyth because he needed—
- A a large engine for a large ship
 B more laborers to work on his ship
 C advice on how to work with large machinery
 D a large tool to be able to work on a large engine

Standard 2 (Context Clues) M

7. Read the sentence from paragraph 6 of the passage.

I patented, or obtained exclusive rights to, my invention in 1842—I did not want anyone else to take credit for my idea!

Which is another word for exclusive?

A Limited
 B Many
 C Sole
 D Useful

6.RC.E (Summarize/Paraphrase/Synthesize) H

8. How did the invention of the steam hammer affect Nasmyth's Patricroft factory?
- A Tilt hammers were used more and more.
 B Large ship engines had to be redesigned.
 C Production costs for metalwork went down.
 D Ship's anchors had to be made a little at a time.

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Standard 10 (Facts For/Against an Issue) M

9. According to Nasmyth, what set his steam hammer apart from other tools, such as the regular forge hammer?
- A It could deliver blows with extreme force.
 - B The force of each blow could be controlled.
 - C It could be demonstrated in front of crowds.
 - D It allowed blacksmiths to mold and shape metal.

Use both “The Hammerman” and “A Steam Solution” to answer questions 10 and 11.

Standard 7 (Memoir/Autobiography) H

10. Which of the following does Nasmyth do in both passages?
- A Designs a safety ladle
 - B Studies the original tilt hammer
 - C Performs demonstrations of an invention
 - D Patents, or obtains rights to, an invention

Standard 7 (Memoir/Autobiography) H

11. How is “The Hammerman” different from “A Steam Solution”?
- A “The Hammerman” talks about Nasmyth as a problem solver, while “A Steam Solution” does not.
 - B “The Hammerman” mentions the family name and history, while “A Steam Solution” does not.
 - C “The Hammerman” spans James Nasmyth’s entire life, while “A Steam Solution” tells primarily about one invention.
 - D “The Hammerman” describes James Nasmyth’s “Scheme Book,” while “A Steam Solution” never mentions Nasmyth’s designs.